servation the fall of the barometer and the circulation of the winds showed that the centre was southeast of Charleston. On the 2d, the storm pursued with great energy its northeasterly course, passing beyond the North Carolina coast. At no time was the storm-centre within the limits of the land stations of this service. At this date marine reports are missing which might show where the storm originated. The following maximum velocities were reported from Savannah and Charleston, respectively, 36, n., and 41, ne. Cautionary signals were displayed from Smithville to Sandy Hook, and the following are the reported maximum velocities: Smithville, 35, ne.; Macon, 46, nw.; Hatteras, 56, ne.; Kittyhawk, 43, ne.; Cape Henry, 28, ne.; Chincoteague, 30, ne.; Delaware Breakwater, 33, ne.; Cape May, 26, ne.; Barnegat City, 25, e.

III.—At the midnight observation of the 5th a depression was developed in western Colorado, which, on the 6th, increasing considerably in energy, moved in a northeasterly track over the northwest. On the 7th, the storm-centre advanced rapidly over the lake region into the Saint Lawrence valley, passing on the 8th beyond the Gulf of Saint Lawrence. As is not unusual in May storms, very little rain fell to the south of the track of the centre of low area, the precipitation being generally confined to the north and west quadrants. Although not a severe storm, cautionary signals were displayed on Lakes Superior and Michigan, and the following maximum velocities were reported: Grand Haven, 25, s.; Duluth, 28, ne.

IV.—On the 8th, a storm exhibiting considerable energy, appeared in Colorado. On the 9th, the centre of depression moved to the eastward into Iowa accompanied by heavy rains and high winds. On the 10th, the storm had advanced over the lake region, and general rain fell as far south as the Gulf of Mexico. On the 11th, the storm-centre moved to the northeast, beyond the limits of the stations of observations. During the progress of this storm to the eastward, rain fell at nearly all the stations east of the Rocky mountains. Cautionary signals were displayed in advance of this storm on Lakes Michigan, Huron, and Erie, and were generally justified by the following maximum velocities: Escanaba, 33, ne.; Milwaukee, 31, se.; Grand Haven, 32. nw.; Mackinaw City, 52, e.; Alpena, 27, nw.; Port Huron, 29, nw.; Toledo, 32, sw.; Cleveland, 29, s.; Erie, 25, s.; Buffalo, 30, sw.

V.—On the 13th, a storm-centre, exhibiting considerable force, moved to the eastward over Colorado and Nebraska. On the 14th, increasing in energy, it advanced into Ohio. At the morning observations of this day the pressures in Iowa were from 0.5 to 0.6 inch below the normal. On the 15th, with a great diminution of energy, the centre of low area was transferred beyond the middle Atlantic coast. Cautionary signals were displayed for this storm on all the lakes, except Lake Ontario. The following are the maximum velocities: Duluth, 28, ne.; Milwaukee, 25, se.; Grand Haven, 29, ne.; Detroit, 28, ne.; Toledo, 40, n.; Cleveland, 28, n.

VI.—On the 17th, a very severe storm-centre, moving to the northeastward, appeared in Colorado. At the midnight observation the following low-pressures were reported: North Platte, and Yankton. 29.16; Omaha, 29.22; or all lower than 0.7 inch below the normal. On the 18th, the storm-centre, increasing in energy, moved into Minnesota, At the morning report the barometer at Yankton, 29.12, was 0.81 inches below the normal. On the 19th, the storm continued very severe as its centre moved over the upper lake region. On the 20th, the low area moved in an easterly track into the Saint Lawrence valley and disappeared the next day beyond the gulf of that name. This storm is especially notable for the high winds that appeared in the lake region after the passage of the centre of low area, and also for the development of a secondary depression (vii.) in Arkansas. For this storm, cautionary signals were displayed on all the lakes, except Lake Ontario, and were generally justified by the following maximum velocities: Duluth, 33, ne. and 28, nw.; Marquette, 33, s.; Chicago, 32, sw.; Milwaukee, 45, w.; Grand Haven, 37, s.; Detroit, 40, s.; Toledo, 32, sw.; Cleveland, 28, n.

VII.—As stated in the description of low area vi., vii. was a subsidiary developement from the former depression. At the midnight observation of the 19th, low area vi. was central north of Lake Huron, with the pressure rising in the upper lake region, the northwest, and thence to the Rio Grande valley. At the same time there was a decided fall of pressure in Arkansas. The morning observation of the 20th, showed a fall in pressure of 0.29 inch at Memphis. In the afternoon the lowest barometer, 29.52, was at Nashville; at the same time a great trough-like depression extended from the mouth of the Saint Lawrence river to Tennessee. At midnight the pressure in Virginia and North Carolina was, in general, 0.5 inch below the normal. On the 21st and 22d, the storm-centre, moving slowly to the northeastward, remained in the middle Atlantic states. High northerly winds with cold rains were reported from the lake region. On the 23d and 24th, diminishing in energy, the low area moved along and beyond the New England coast. Cautionary signals were displayed from Hatteras to Eastport, and the following maximum velocities registered: Hatteras, 36, sw.; Kittyhawk, 38, sw.; Delaware Breakwater, 33, se.; Cape May, 28, se.; Barnegat City, 33, s.; Sandy Hook, 38, e.; Block Island, 26, s.; Eastport, 40, ne.

VIII.—At the midnight observation of the 27th, a considerable depression was central in Kansas. On the 28th, it moved in an easterly path into Ohio, but without developing any special storm energy. On the 29th, the low area moved to the northeastward into the Gulf of Saint Lawrence. No cautionary signals were displayed for this low area.

IX.—On the 29th, the pressure was low in Texas, with light and variable winds. On the 30th, the low area, developing greatly in energy, moved very rapidly in a northeasterly track to the lower lake region. On the 31st, the storm-centre moved beyond the limits of the observing stations. Cautionary signals were displayed for this storm from Delaware Breakwater to Eastport, and were generally justified by the following velocities: Delaware Breakwater, 32, s.; Cape May 32, s.; Barnegat City, 29, sw.; Sandy Hook, 27, se.; New London, 25, s.; Block Island, 28, s.; Provincetown, 27, sw.; Thatcher's Island, 26, s.; Eastport, 28, se.

NORTH ATLANTIC STORMS DURING MAY, 1883.

[*Pressure expressed in inches and in millimetres; wind-force by scale of* 0—10.]

Chart ii. exhibits the tracks of the principal depressions that have moved over the north Atlantic ocean during May, 1883. The location of the various storm-centres has been approximately determined from reports of observations furnished by agents and captains of ocean steamships and sailing vessels in the north Atlantic, and from other miscellaneous data received at this office up to June 21st. The observations used are, in general, simultaneous, being taken each day at 7 h. 0 m. a. m., Washington, or 0 h. 8 m. p. m., Greenwich mean time.

Of the five depressions shown on the chart, only one, v., has been traced as a continuous storm from the North American continent northeastward to the British coasts. Two depressions apparently developed over the ocean near the fiftieth parallel, both moving in a northeasterly direction. The depressions i. and iv., after leaving the coast of the United States, filled up apparently west of the fiftieth meridian. Low area iii. was remarkable for the unusual depth, at this season of the atmospheric depression, and for the absence of the violent winds and stormy weather commonly associated with such depressions.

The weather over the north Atlantic during the month was generally fair, but dense fogs prevailed over the region west of the fortieth meridian almost uninterruptedly throughout the month. The atmospheric pressure was, in general, high.

The following are brief descriptions of the depressions traced on the chart.

I.—This was probably a continuation of the disturbance traced as low area ii. of chart i. During its passage northeastward along the coast of the Carolinas, it displayed great energy and several vessels sustained loss of spars and sails.

On the 4th, it was apparently central near N. 32° W. 69°; the bark "Commerce," in N. 31° 31′, W. 66° 31′ reported barometer 29.71 (754.6), wind sse., force 4, threatening; while vessels to the west of 70° west longitude, had fresh to strong northerly gales. During the 5th, the disturbance remained near N. 35°, W. 67°, but on the 6th it apparently began to move northeastward, and on the 7th it was central near N. 41°, W. 61°, causing rain in the Canadian maritime provinces. The subsequent course of this depression cannot be indicated, owing to the absence of reports from the region indicated on the chart by the limits of icebergs, but it is probable that the depression filled up near the Banks, as on the following day the barometer was generally high to the westward.

II.—On the 7th, the reports indicated the presence of a disturbance over the northwestern part of the Bay of Biscay, with its centre probably west of Brest. The lowest reported barometer was observed on board the s. s. "Rotterdam," in N. 49° 46′, W. 8° 48′, on the 7th, when it read 29.47 (748.5), wind nne., force 6. During the day the depression passed northeastward to the English Channel.

III.—On the morning of the 10th, a depression was observed near N. 50°, W. 30°, its presence being indicated by the following vessel-reports: s. s. "Rhynland," in N. 46° 58′, W. 31° 04′, barometer 29.79 (756.7), a fall of more than half an inch, wind w., force 4, foggy; s. s. "Pavonia," in N. 48° 31′, W. 24° 28′, barometer 29.8 (756.9), wind sse., force 3, foggy; bark "Rebus," in N. 46° 29′, W. 26° 5′, barometer 29.81 (757.2), wind ssw., force 5, light rain. By the 11th, the area of distribution had greatly increased and the barometer had fallen to 29.29 (744.0); fair weather prevailed near the centre, with cloudy weather or rain to the eastward, while the winds blew with the force of a moderate gale. During the day, the barometer continued to fall and, by the morning of the 12th, the region of least pressure was between N. 47° and 52°, and W. 20° and 25°; the s. s. "City of Paris," in N. 47° 24′, W. 24° 09′, reported: at the simultaneous observation, the barometer read 29,03 (737.3), wind sw., force 7, squally; at 7.45 p. m. of the same day, the wind hauled to wnw., with a heavy squall and rain, and blew a strong gale for three hours, the lowest barometric reading was 28.99 (736.3). Captain Kennedy, of the s. s. "Germanic," (about N. 51° 14′, W, 14° 37′,) reported: 12th, noon, wind sse, moderate gale and confused sea, weather fine, barometer 29.08 (738.6); 7.30 p. m., wind ssw., fresh gale and squally, barometer 29.01 (736.8). 13th, (about N. 50° 50′, W. 19° 50′,) 1 a. m. wind chopped into wnw., moderating to strong breeze, with confused sea, barometer 28.84 (732.5); between 1.30 and 2.00 a. m., wind veering between ssw. and wnw., moderate to light breeze and cloudy; barometer 28.82 (732.0). At 2.30 a. m. the barometer began to rise gradually and the wind settled into a strong nw. breeze and squally, afterward increasing to fresh nnw. and nw. gale, which lasted until 6 p. m., when it moderated to strong nw. breeze, barometer, 29.76 (755.9). The s. s. "Marengo," in N. 48° 58′, W. 25° 06′, reported barometer 29.06 (738.1), wind sw. by w., force 6, squally and rainy, and no vessel within the region bounded by N. 47° and 52° and W. 20° and 30°, reported pressures exceeding 29.2 (741.7). On the 13th, the disturbance was central at some distance off the northwest coast of Ireland, causing strong southerly gales and rain over that country; to the west of the twentieth meridian, strong n. and nw. winds continued. On the 14th, the depression was passing northeastward and was near the Hebrides.

IV.—This disturbance was probably a continuation of that charted as low area v. chart i. It passed off the New Jersey coast into the Atlantic on the 15th, and moving northeastward, was central near N. 41° W. 67°, on the 16th. On that date, the barkentine "C. S. Bushnell," in N. 38° 50′, W. 67° 20′, reported barometer 29.57, wind s., force 7, cloudy; wind shifting at 10 a. m. to nnw., strong gale with rain; the s. s. "Elysia," in N. 41° 14′, W. 63° 48′, reported a. m. of 15th, wind hauling to s.; p. m., fresh s. breeze; midnight, heavy sw. swell; 7 a. m. of 16th, wind falling light, barometer 29.64 (752.8). On the 17th, the pressure increased and the depression probably filled up in front of an area of high pressures which stretched westward to the fiftieth meridian. From the 18th to the 24th, the pressure was high over the ocean, except in the vicinity of the Bahamas and Bermudas, where a disturbance was probably present. Captain Shackford, of the s. s. "Acapulco," in W. 74° and between N. 17° and 22°, reported heavy northerly swell. "Such a swell rolling into Crooked Island passage is very unusual." Captain Tracy of the brig "Teneriffe," near the same position, also reported: "20th, during the last two days, the weather has been fine, but the wind at times has been very strong and baffling, with a very heavy rolling sea from the northward. Never saw anything like it before in Crooked Island passage at this season of the year."

V.—This disturbance was probably a continuation of low area vii. of chart i. The centre of depression passed to the northeast of the Maritime Provinces on the 25th, and continuing its northeasterly course, was central near N. 50°, W. 50°, on the 26th. The s. s. "Colina," N. 48° 39′, W. 48° 22′, reported winds shiting from s. by e. to wsw., barometer 29.4 (746.7); during the day the disturbance moved northeastward, north of the region covered by the reports, and on the 27th the region of least pressure was shown near N. 55°, W. 30°; the s. s. "Dominion," reporting barometer 29.4 (746.7), wind sw. by s., force 3, hazy. On the 28th, the disturbance moved northeastward north of the fifty-fifth parallel, and on the 29th, its presence was indicated to the westward of the Hebrides by strong southerly gales in those islands and southwesterly gales in Ireland.

OCEAN ICE.

Chart ii. also exhibits the southern and eastern limits of icebergs in the north Atlantic during the month of May, 1883. This chart is based on reports communicated by shipmasters to this office; reports furnished through the co-operation of the "New York Herald Weather Service," and other data published by the "New York Maritime Register."

In May, 1883, the eastern limit of icebergs in the north Atlantic ocean reached W. 45°; south of the forty-fourth parallel the limit gradually receded until it reached W. 47°. The southern limit extended from Cape Breton Island southeastward to N. 40° 30′. No ice-fields were reported in the Atlantic ice region during the month, but much ice was observed in the Gulf of Saint Lawrence. Icebergs were most numerous from N. 42° to 44° and between W. 52° and 47°.

Compared with the chart for last month (April), there has been a very slight southerly movement, but no change has occurred in the position of the eastern limit south of the forty-fifth parallel. To the northward of that parallel the eastern limit has receded about two degrees.

A comparison with the ice-chart for May, 1882, shows: 1st, that the eastern limit of the ice region in May, 1883, was about three degrees to the westward of that for May, 1882, but the southern limit remained the same in both years; 2d, that the number and size of the icebergs reported during May, 1882, greatly exceeded those observed in the same month of this year, while field ice was entirely absent in the region covered by the reports.

In May, 1882, the Gulf of Saint Lawrence was blocked by heavy ice, and many vessels were hemmed in. Large masses of ice drifted along the shores of Nova Scotia southward to Halifax, in which port vessels were ice-bound at the close of the month. In May of this year none of the above conditions have been reported.

Icebergs were reported as follows:

2d.—S. S. "Rugia," in N. 41° 30′, W. 50° 06′, passed an iceberg.

3d.—S. S. "Alaska," in N. 43° 00′, W. 49° 40′ to W. 51°, passed several large icebergs; bark "Lynwood," in N. 42° 58′, W. 48° 10′, saw a large iceberg, apparently about one and a half miles long and about two hundred and fifty feet high; s. s.

"Sardinian," in N. 45° 39′, W. 47° 10′, passed several small pieces of ice; also in p. m. passed several icebergs; saw last iceberg in N. 45° 03′, W. 50° 17′.

4th.—S. S. "Main," in N. 42° 31′, W. 49° 45′, passed a large iceberg; also in N. 42° 15′, W. 51° 03′, passed some smaller ones; s. s. "Lord Gough," in N. 40° 56′, W. 47° 20′, passed a large iceberg.

5th.—Ship "Zambesi," sixteen miles east of Scatari, Cape Breton, struck heavy ice, stove bow, and sank in twenty minutes; ship "J. W. Wendt" passed close to an iceberg fifteen feet high and sixty feet long.

6th.—S. S. "State of Pennsylvania," in N. 41° 28′, W. 51° 50′, passed two icebergs; s. s. "Pavonia," in N. 41° 01′, W. 47° 27′, passed a large iceberg.

7th.—S. S. "Thornholme," in N. 43°, W. 50°, passed three icebergs; s. s. "Leerdam," in N. 45° 40′, W. 45° 12′, passed several large cakes of ice.

8th to 11th.—Ship "Festina Lente," near Bird Rock and Magdalen Islands, encountered much ice.

11th.—S. S. "Wyoming," in N. 42° 51′, W. 47° 33′, passed a large iceberg; also from N. 42° 25′, W. 51° 00′ to N. 42° 40′, W. 49° 53′, passed several icebergs.

13th.—S. S. "State of Florida," in N. 42° 23′, W. 49° 27′, passed an iceberg.

14th.—S. S. "Rotterdam," in N. 44° 15′, W. 46° 30′, passed two icebergs; also many small pieces of ice; s. s. "Landaff City," in N. 43° 45′, W. 48° 30′, passed an iceberg.

16th.—S. S. "California," in N. 42° 48′, W. 46° 53′, passed an iceberg; s. s. "Fulda," in N. 42° 37′, W. 48° 34′, passed a large iceberg.

17th.—S. S. "California," in N. 41° 55′, W. 52° 08′, passed an iceberg.

18th.—S. S. "Assyrian Monarch," in N. 45° 40′, W. 46° 00′, passed a large iceberg.

19th.—S. S. "Bothnia," in N. 42° 49′, W. 51° 46′, passed an iceberg; s. s. "Assyrian Monarch," in N. 45° 00′, W. 46° 49′, passed several icebergs.

20th.—S. S. "Jan Breydel," in N. 44° 19′, W. 48° 15′, passed two large icebergs.

21st.—S. S. "Adriatic," in N. 42° 35′, W. 48° 50′, passed an iceberg; also in N. 42° 06′, W. 52° 00′, passed another; s. s. "Cornwall," in N. 46° 00′, W. 45° 35′, passed a small iceberg about thirty feet high.

22d.—S. S. "Lord Gough," in N. 43° 00′, W. 46° 00′, passed two large icebergs.

25th.—S. S. "Pavonia," in N. 43° 42′, W. 47° 15′, passed an iceberg.

26th.—S. S. "De Ruyter," in N. 45° 25′, W. 48° 02′, passed two icebergs about two hundred feet high; s. s. "Pavonia," in N. 42° 32′, W. 52° 10′, passed an iceberg; also in N. 42° 44′, W. 50° 29′, passed three others; s. s. "Colina," in N. 48° 39′, W. 48° 22′, sighted four icebergs.

27th.—S. S. "Labrador," in N. 43° 10′, W. 51° 40′, passed two icebergs.

28th.—S. S. "Labrador," in N. 42° 55′, W. 52° 44′, passed two icebergs; s. s. "State of Nebraska," from N. 43° 01′, W. 49° 22′ to N. 42° 44′, W. 52° 04′, passed seven icebergs.

31st.—S. S. "Furnessia," in N. 43° 32′, W. 46° 03′, passed an iceberg; s. s. "Bohemia," in N. 43° 40′, W. 48° 00′, passed an iceberg.

No date.—Bark "Karl," in N. 40° 30′, W. 47° 00′, saw an iceberg twenty-five feet high and three hundred feet long; bark "Vasco da Gama," in N. 47° 40′, W. 50° 16′, passed about a dozen icebergs; ship "Christine," in N. 44° 00′, W. 49° 00′, saw an iceberg about four hundred feet high.

TEMPERATURE OF THE AIR.

[*Expressed in degrees, Fahrenheit.*]

The distribution of mean temperature over the United States and Canada, for the month of May, 1883, is exhibited on chart iii., by the dotted isothermal lines.

The general distribution of mean temperature during the month of May, and the districts of maximum departures from the May normal of each year, since 1873, are as follows:

Districts.	Maximum departures.	Year.	Remarks.
	°		
		1873	Above the normal over northern Michigan, Lake Huron, southern Ohio, Kentucky, Tennessee, and eastern Massachusetts; below the normal in Kansas, Missouri, Minnesota, Wisconsin, Indiana, Illinois, the lower lake region, and throughout the Atlantic and Gulf states.
Missouri valley	+ 4.6	1874	Below the normal on the Atlantic coast; above the normal north of the Ohio and Missouri rivers: normal in the Gulf states and on the Pacific coast.
Upper Mississippi valley	+ 3.6		
Minnesota	+ 3.4		
South Atlantic states	− 2.6		
Saint Lawrence valley	− 4.8	1875	Below the normal in the Saint Lawrence valley, along the Atlantic coast, in the upper lake region, Mississippi valley, and on the Pacific coast; above the normal in the lower lake region, Gulf states, and Missouri valley.
Pacific coast	− 1.2		
Lower lakes	+ 2.7		
Gulf states	+ 1.2		
Saint Lawrence valley	− 3.8	1876	Normal in the middle Atlantic and Gulf states and upper Mississippi valley; above the normal in the Ohio and Missouri valleys, Minnesota, and lake region; below the normal in the Saint Lawrence valley, New England, south Atlantic states, and on the Pacific coast.
Pacific coast	− 2.1		
Lower lakes	+ 2.5		
Missouri valley	+ 2.0		
South Atlantic states	− 3.7	1877	Normal in the lower lakes, upper Missouri, upper Mississippi, and Saint Lawrence valleys; above the normal in Minnesota, the upper lakes, and New England; below the normal along the Gulf, middle, and south Atlantic coasts, and also on the Pacific coast.
Ohio valley	− 2.4		
Minnesota	+ 2.2		
Upper lakes	+ 2.2		
Missouri valley	− 4.6	1878	Normal in the lake region; below the normal in the Missouri, upper Mississippi, Ohio, and Saint Lawrence valleys; above the normal on the Atlantic, Gulf and Pacific coasts.
Upper Mississippi valley	− 4.4		
Minnesota	− 3.3		
New England	+ 1.7		
South Atlantic states	+ 1.7		
Eastern slope	+ 4.3	1879	Above the normal in all districts east of the Rocky mountains, except 1°.5 below the normal in Florida; below the normal on the Pacific coast, in Arizona, Nevada, and Idaho.
Northern slope	+ 3.0		
Boise City, Idaho	− 6.2		
Umatilla, Oregon	− 4.2		
Tucson, Arizona	− 3.6		
Middle Atlantic states	+ 7.4	1880	Above the normal in the middle slope, west Gulf states, and in the districts east of the Missouri and lower Mississippi rivers, except Florida; below the normal in the northern and southern slopes, and west of the Rocky mountains, except on the middle Pacific coast.
Upper lakes	+ 6.6		
Upper Mississippi valley	+ 5.3		
Ohio valley	+ 5.1		
Northern plateau	− 5.9		
North Pacific	− 3.8		
Upper Mississippi valley	+ 6.2	1881	Above the normal over the entire country, except normal in Florida, and slightly below normal in the Rio Grande valley and southern slope.
Minnesota	+ 4.8		
Upper lakes	+ 4.0		
Salt Lake City, Utah	+ 4.1		
Rio Grande valley	− 2.2		
Southern slope	− 0.5		
Upper Mississippi valley	− 8.2	1882	Normal in the middle and north Pacific coast regions; slightly above the normal in Florida; decidedly below the normal in all other districts.
Missouri valley	− 7.2		
Ohio valley	− 6.6		
Saint Lawrence valley	− 6.4		
Florida	+ 0.5		

The following are some of the extreme monthly mean temperatures reported from Signal-Service stations:

Stations reporting highest.	°	Stations reporting lowest.	°
Eagle Pass, Texas	81.7	Pike's Peak, Colorado	19.5
Uvalde, Texas	79.7	Mount Washington, New Hampshire	34.0
Key West, Florida	79.5	Deadwood, Dakota	43.3
Fort Stockton, Texas	76.6	Marquette, Michigan	44.0
Indianola, Texas	76.2	Alpena, Michigan	44.6
Galveston, Texas	75.6	Mackinaw City, Michigan	44.7
Punta Rassa, Florida	75.3	Escanaba, Michigan	45.1
Brackettville, Texas	75.1	Duluth, Minnesota	45.5
Cedar Keys, Florida	75.1	Saint Vincent, Minnesota	45.8
Yuma, Arizona	74.4	Cheyenne, Wyoming	46.3
New Orleans, Louisiana	74.3	Eastport, Maine	47.4
Sanford, Florida	74.0	Fort Washakie, Wyoming	47.8

The mean temperature of May, 1883, compared with the normal, as determined from the Signal-Service records, shows the month to have been colder than the average May, in nearly all districts. In the Rio Grande valley, and north Pacific coast region the mean temperature is 1°.1 above the normal; in the middle Atlantic states, the departure above the normal is but 0°.1; and a normal condition is reported from the northern plateau. With the exception of the above districts, the mean temperature is below the normal in all other parts of the country. In New England, the deficiency is very slight, being only 0°.3, but marked departures occur in the northern districts from the lake region westward to the Rocky Mountains. The